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Japan-China Workshop on Analysis and Optimization of Large-scale Structures

May 14, 2018

Supported by JSPS-NSFC Japan-China Scientific Cooperation Project

Organized by Structural Engineering of Buildings Laboratory,

Department of Architecture and Architectural Engineering, Kyoto University

Foreword

It is our great pleasure to organize “Japan-China Workshop on Analysis and Optimization of Large-scale Structures” among the leading researchers and students in Japan and China in the fields of large-scale structures, steel structures, and structural optimization. This workshop is supported by JSPS-NSFC Japan-China Scientific Cooperation Project. The title of project is “Optimum design of large transmission tower and cable system considering life-cycle cost.”

From April of 2016, we have discussed various aspects of analysis and design of transmission towers including related fields such as buckling and limit analysis of steel members and connections, reliability analysis for life-cycle cost design, and optimization approaches to design of large-scale structures. Although the purpose of this project is to carry out joint research, we decided to have a small workshop to summarize the research results obtained from this project, and to strengthen relationship among more researchers in Japan.

We hope that this workshop is fruitful for further development of collaboration between researchers in two countries.

May 14, 2018

Makoto Ohsaki (Kyoto University, Japan)
Zhengliang Li (Chongqing University, China)

Program

Date: May 14

Site: ROHM Plaza Meeting Room, Kyoto University Katsura Campus

9:10-9:20	Opening		
9:20-9:45	Zhengliang LI	Prof., Chongqing Univ.	Limit analysis for stiffened eight-bolted base plate connections in EHV transmission towers
9:45-10:10	Wenliang FAN	Prof., Chongqing Univ.	Reliability assessment of deteriorating structures using Bayesian updated probability density evolution method (PDEM)
10:10-10:35	Hiroshi TAGAWA	Prof., Hiroshima Univ.	Improvement of buckling restrained round steel bar dampers for beam-to-column connections
Break			
10:45-11:10	Xingchen CHEN	Assistant Prof., Hiroshima Univ.	Seismic performance of controlled spine frames
11:10-11:25	Yunfei ZU	Graduate Student, Chongqing Univ.	Reliability analysis of all components in structural systems based on adaptive point estimate method and the principle of maximum entropy
11:25-11:40	Runyu LIU	Graduate Student, Chongqing Univ.	A new point estimation method based on dimensional reduction method and direct numerical integration
11:40-11:55	Jingchao WANG	Graduate Student, Chongqing Univ.	Structural similitude for the geometric nonlinear buckling of stiffened orthotropic shallow spherical shells by energy approach
11:55-12:20	Hongjun LIU	Assoc.Prof., Chongqing Univ.	Nonlinear dynamic analysis of the transmission tower-line system subjected to wire breakage
Lunch			
13:25-13:50	Jingyao ZHANG	Associate Prof., Nagoya City Univ.	Nonlinear analysis of tensegrity structures

13:50-14:15	Toshiaki KIMURA	Assistant Prof., Kyoto Univ.	Computational morphogenesis of free-formed shell
14:15-14:30	Yousen FAN	Graduate Student, Tohoku Univ.	Effect of foundation displacement on strength degradation and member damage of electric transmission tower
14:30-14:45	Jiahua LUO	Graduate Student, Tohoku Univ.	Bearing capacity analysis of transmission tower foundation on slope crest
Break			
14:55-15:20	Makoto YAMAKAWA	Prof.,Tokyo Univ. of Science	Robust design optimization of moment-resisting steel frame against uncertainties of surface ground properties using order statistics
15:20-15:45	Makoto OHSAKI	Prof., Kyoto Univ.	Multi-objective optimization of a tower-type truss using order statics
15:45-16:00	Yusuke SAKAI	Graduate Student, Kyoto Univ,	Discrete elastica for shape design of grid shells
16:00-16:15	Kazuki HAYASHI	Graduate Student, Kyoto Univ.	Regularization of triangular latticed shell members and panels for Bézier surfaces
16:15-16:30	Qing Ma	Graduate Student, Kyoto Univ., Tinanjin Univ.	Step-by-Step Unbalanced Force Iteration Method for Cable-Strut Structure with Irregular Shape

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ABSTRACT